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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/635,640	08/07/2003	Takako Ozawa	Q76832	8806
23373	7590	06/15/2004	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			UHLIR, NIKOLAS J	
			ART UNIT	PAPER NUMBER
			1773	

DATE MAILED: 06/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/635,640

Applicant(s)

OZAWA ET AL.

Examiner

Nikolas J. Uhler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 08172003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement filed 08/07/2003 has been considered. A signed and initialed copy of this document is enclosed with this office action.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa (US2002/0034028A1) in view of Nishikawa (US2002/0051306A1).
5. For the purpose of clarity, the above-cited references are denoted as Nishikawa '028 and Nishikawa '306 respectively.
6. Claim 1 requires a master information carrier having on a surface thereof an irregularity pattern representing information to be transferred to a magnetic recording medium held in contact with the surface of the master information carrier, wherein the improvement comprises that the parts of the surface of the master information carrier which is brought into contact with the magnetic recording medium have a center plane mean average surface roughness in the range of 0-3-10.0nm.

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7. Regarding these limitations, Nishikawa '028 teaches a master information carrier that comprises an irregularity pattern (i.e. protrusion portions) representing data to be transferred to a slave medium by contact magnetic transfer (section 19). The substrate can be a metal or a resin material (sections 32 and 35). If the substrate is a metal, the depth of the irregularity pattern is 80-800nm, more preferably 150-600nm (section 32). If the substrate is a resin, then the depth of the irregularity pattern is 50-1000nm, more preferably 200-500nm (section 35). A magnetic layer is formed over the surface of the irregularity pattern (section 33) This magnetic layer is preferably 50-500nm thick, more preferably 150-400nm thick (section 33).

8. Nishikawa '028 fails to disclose the required the mean surface plane roughness required by claim 1.

9. However, Nishikawa '306 discloses that the mean surface plane roughness S_{Ra} of a magnetic master medium having grooves in its surfaces impacts the adsorption of force between the master and the slave medium, as well as the quality of the signal transfer from the master to the slave (section 28). Specifically, Nishikawa '306 teaches that the S_{Ra} of a master medium should be between 0.2nm-5nm (section 28). If S_{Ra} is less than 0.2nm, then adsorption force between the slave and the master is so high as to prevent the slave and master from being easily detached (section 28). If the S_{Ra} is greater than 0.5nm, the distance between the master and the slave is too high and magnetic transfer between the master and the slave is impaired (section 28). Nishikawa '306 teaches specific embodiments wherein a master medium having groove in its

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surface exhibits satisfactory performance when the surface roughness is 0.8nm, 2nm, and 4.6nm (table 1).

10. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the master medium taught by Nishikawa '028 so as to have an average surface plane roughness SRa of 0.8nm or 2nm.

11. One would have been motivated to make this modification in view of the teaching in Nishikawa '306 that the SRa of a master medium impacts adsorption force and transfer quality. One would have specifically been motivated to control the roughness to 0.8nm or 2nm in view of the teaching in Nishikawa '306 that a master medium having grooves (similar to the irregularity pattern taught by Nishikawa '028) exhibits satisfactory performance with these specific roughness values.

12. The limitations of claims 2-13 are met as set forth above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikolas J. Uhlir whose telephone number is 571-272-1517. The examiner can normally be reached on Mon-Fri 7:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul J. Thibodeau can be reached on 571-272-1516. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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